CLAIMS

What is claimed is:

1. A method of introducing heterologous DNA into a non-plant host cell thereby producing a gene product in said cell, said method comprising:

a) inserting heterologous DNA encoding said gene product into a unique restriction endonuclease cleavage site of a vector, said vector comprising:

i) a backbone which includes a first origin of replication capable of maintaining heterologous DNA as a single copy in *Escherichia coli* host cell, and which further includes a second origin of replication capable of maintaining heterologous DNA as a single copy in an *Agrobacterium tumefaciens* host cell;

ii) a unique restriction endonuclease cleavage site for insertion of heterologous DNA; and

iii) left and right *Agrobacterium* T-DNA border sequences flanking said unique restriction endonuclease cleavage site, said left and right T-DNA border sequences allowing introduction of heterologous DNA located between left and right T-DNA border sequences into a non-plant cell;

b) transforming a non-plant cell so as to introduce said heterologous DNA into said cell; and

c) expressing said heterologous DNA in said non-plant cell so as to produce the gene product encoded by said heterologous DNA into said cell.

2. The method of claim 1, wherein said host cell is a yeast cell or a filamentous fungus.

3. The method of claim 2, wherein the yeast cell is *Saccharomyces cerevisiae* or *Kluyveromyces lactis.*

4. The method of claim 2 wherein the filamentous fungus is from the genus *Aspergillus.*

5. A method of producing a gene product in a non-plant host cell, said method comprising:

a) inserting heterologous DNA encoding said gene product into a unique restriction endonuclease cleavage site of a vector, said vector comprising:

i) a backbone which includes a first origin of replication capable of maintaining heterologous DNA as a single copy in *Escherichia coli* host cell;

ii) a unique restriction endonuclease cleavage site for insertion of heterologous DNA; and

iii) left and right *Agrobacterium* T-DNA border sequences flanking said unique restriction endonuclease cleavage site, said left and right T-DNA border sequences allowing introduction of heterologous DNA located between left and right T-DNA border sequences into a non-plant host cell;

b) introducing the resulting vector, into said non-plant host cell; and

c) expressing said heterologous DNA in said non-plant host cell so as to produce the gene product encoded by said heterologous DNA.

6. The method of claim 5, wherein said vector further includes a second origin of replication capable of maintaining heterologous DNA as a single copy in an *Agrobacterium tumefaciens* host cell.

7. The method of claim 5, wherein the non-plant host cell is *Escherichia coli.*

8. The method of claim 5, wherein the non-plant host cell is a non-plant eukaryotic cell.

9. The method of claim 8, wherein the non-plant eukaryotic cell is a yeast cell.

10. The method of claim 8, wherein the non-plant eukaryotic cell is a mammalian cell.

11. The method of claim 1 or 5, wherein the heterologous DNA is obtained from genomic DNA of prokaryotic cells.

12. The method of claim 1 or 5, wherein the heterologous DNA is obtained from genomic DNA of eukaryotic cells.

13. The method of claim 1 or 5, wherein said first origin of replication comprises an F origin from *Escherichia coli.*

14. The method of claim 1 or 5, wherein said second origin of replication comprises an Ri origin from *Agrobacterium rhizogenes*.

15. The method of claim 6, wherein first origin of replication comprises an F origin from *Escherichia coli* and said second origin of replication comprises an Ri origin from *Agrobacterium rhizogenes*.

16. The method of claim 1 or 5, wherein said unique restriction endonuclease cleavage site comprises a BamHI cleavage site.